



Portland composite cement



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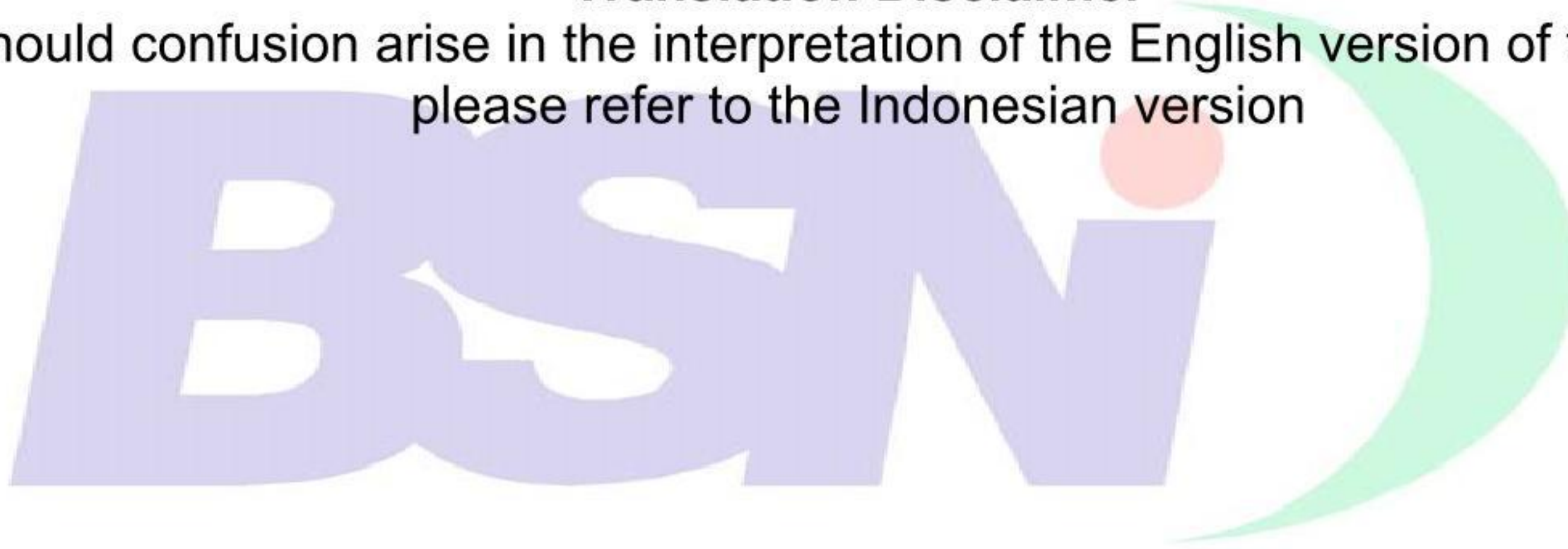
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Published in Jakarta

Translation Disclaimer

Should confusion arise in the interpretation of the English version of this SNI,
please refer to the Indonesian version





Content

Content	i
Foreward	ii
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Utilizing	1
5 Quality requirements	1
6 Sampling methods.....	2
7 Testing methods.....	2
8 Tested passing requirements	3
9 Packaging.....	3
10 Marking requirements.....	3
11 Storage and transportation	4
Bibliography.....	5

Foreword

Indonesian National Standard (SNI) *Portland composite cement* are arranged in support of the development of national cement industry and to protect the consumers.

This standard is product diversification. The specification of the standard is different from other available cements so that the standard is made separated from others.

The standard is proposed and formulated by Technical Committee 33S, Inorganic chemistry. The standard is consensus results held in Jakarta on 7 July 2004 and attended by representatives of producers, consumers, associations, testing bodies and governmental institutions.



Portland composite Cement

1 Scopes

This standard determines technical specification for Portland composite cement used for general construction.

2 Normative references

SNI 15-2049-2004, *Portland cement*.

3 Terms and definitions

3.1

portland composite cement

hydrolyzed binding material, produced by grinding together clinker of Portland cement and gypsum with one or more inorganic materials, or results of mixing of Portland cement powder and other inorganic material powder. The total content of 6 % to 35 % inorganic materials of Portland composite cement mass consists of *blast furnace slag*, pozzolan, silicate compound, lime stone

4 Utilizing

Portland composite cement is used for general construction such as concrete works, brick masonry, ditch, street, wall gate and special building element production such as pre-mold concrete, pre-pressured concrete, panel of concrete, and paving block and etc.

5 Quality requirements

5.1 Chemical requirements

Chemical requirements of Portland composite cement
 SO_3 maximum 4.0 %.

5.2 Physical requirements

Physical requirements are described on Table 1 below:

Table 1 Physical requirements

No.	Testing	Units	Requirements
1.	Refinement by Blaine tools	m ² /kg	min. 280
2.	Durability by autoclaves - expansion - shrinkage	% %	max. 0,80 max. 0,20
3.	Binding time by Vicat needles - initial binding - end binding	minutes minutes	min. 45 max. 375
4.	Pressure strength - age 3 days - age 7 days - age 28 days	kg/cm ² kg/cm ² kg/cm ²	min. 125 min. 200 min. 250
5.	False set - end penetration	%	min. 50
6.	Air content in mortar	% volume	max.12

6 Sampling methods

Sampling methods and total of Portland composite cement sample for cement testing are based on SNI 15-2049-2004, *Portland Cement*.

7 Testing methods

7.1 Chemical testing

7.1.1 Sulfur trioxide (SO₃)

Determining sulphur trioxide content is based on SNI 15-2049- 2004, *Portland cement*.

7.2 Physical testing

7.2.1 Refinement

Refinement testing using Blaine tools is based on SNI 15-2049-2004, *Portland cement* after the density of Portland composite cement is determined.

7.2.2 Form durability using autoclave

Form durability testing using autoclaves is based on SNI 15-2049-2004, *Portland cement*

7.2.3 Binding time

Binding time testing using Vicat needles is based on SNI 15-2049-2004, *Portland cement*

7.2.4 Pressure strength

Pressure strength testing is based on SNI 15-2049-2004, *Portland cement* after the muddy of Portland composite cement is determined by flow desks.

7.2.5 False set

False set testing is based on SNI 15-2049-2004, *Portland cement*

7.2.6 Air content in mortar

Air content testing in mortar is based on SNI 15-2049-2004, *Portland cement*

8 Tested passing requirements

Portland composite cement is passed the testing if it fulfils all requirements on clausul 5 Quality requirements and tested using method on clausul 7 Testing method.

9 Packaging

9.1 Portland composite cement can be traded in both bulk and packages. Portland composite cement must be packaged in sacks having 20 kg, 40 kg and 50 kg nett weight in every sack.

9.2 The lack of weight may not be more than 2% of weight placed on every package.

9.3 Average weight of every dispatch represented by weighing 50 packages taken randomly may not be less than weight placed on every package.

10 Marking requirements

Packages are placed on names at least:

- a) written "Portland composite cement".
- b) Merk/trade marks.

- c) Names of companies.
- d) Nett weight.
- e) Utilizing

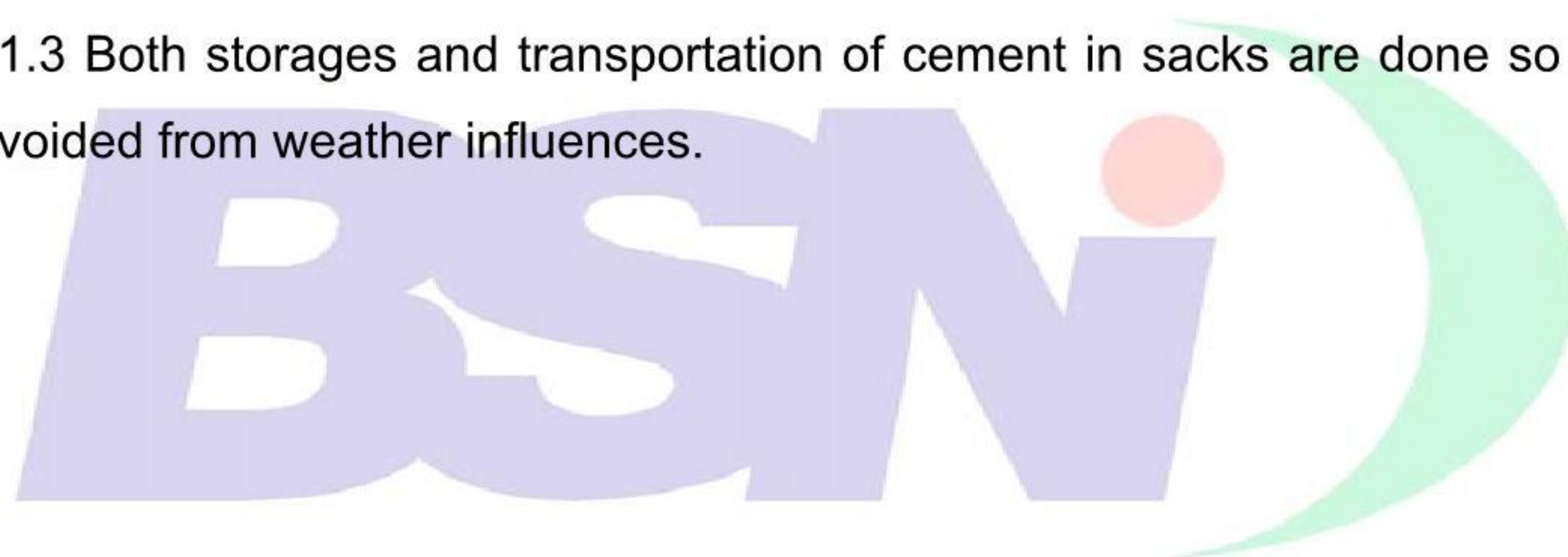
The marking of bulk Portland composite cement is placed on dispatch documents.

11 Storages and transportation

11.1 Cement is stored and transported so that it is easy to inspect and identify.

11.2 Bulk cement is stored in building/weather resistance storages so that it is protected from humidity and avoided from cement agglomeration in storages and transportation.

11.3 Both storages and transportation of cement in sacks are done so that they are avoided from weather influences.



Bibliography

ASTM C 595-03, *Standard specification for blended hydraulic cement.*

ASTM 1157-02, *Standard performance specifications for hydraulic cement.*

EN 197-1part 1 : *Composition, specification and conformity criteria for common cements*

(CEM A - M atau CEM B - M).













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